

still more striking when the very delicate metallic threads, which we call capillary, are employed. 3. The more delicate the thread is, the less it irritates and divides the tissues, this division being the result of ulceration, and not a mechanical action; in order that this advantage be realized, the flaps must not be submitted to too violent traction, for pressure being then exerted on an excessively narrow line, the thread acts in some sense as a cutting instrument: to prevent this inconvenience, the number of sutures must be multiplied, in order to distribute the resistance over a great number of points. 4. The superiority of the metallic threads consists in the following circumstances: (1), their delicacy, for we may give them the fineness of a hair, and yet preserve sufficient resistance; (2), the constancy of their volume, while organic threads notably increase in this through imbibition of the discharges; (3), the polish of their surfaces and their impenetrability by putrefiable fluids; and (4), the fixity with which they maintain the edges of the wound in contact, while the organic sutures become relaxed and float in their track when ulceration has commenced. 5. Of the various metals from which sutures may be made, iron is the most suitable, by reason of its greater tenacity and the facility with which it may be procured; by covering it with an unoxidizable metal, all the advantages are conferred on iron which appertain to other metals, which it might seem desirable to substitute for it by reason of their resistance to the reaction of organic liquids. 6. For autoplastic operations, iron threads of a greater fineness than have hitherto been employed are very suitable; of the delicacy of a hair, they still possess sufficient resistance to allow of their being manipulated with safety and convenience, while so slight is the irritation which they give rise to (being, so to say, forgotten by the tissues), that they are often tolerated without giving rise to suppuration; they may be multiplied without inconvenience, and they may generally be employed without covering them with gold or tin; when they are intended to remain long within the tissues the iron should be galvanized, but in no case has their oxidation hitherto given rise to any serious inconvenience. 7. Metallic should, then, replace organic threads in all kinds of sutures; when they are fine, they are very easily passed through the tissues, and can be fixed by a greater number of procedures than the organic threads; their removal from amidst the tissues in deep-seated regions (as the vagina, velum of the palate, &c.), is the sole difficulty contingent on their employment, but this inconvenience cannot be considered as counterbalancing their advantages; the capillary threads are the only ones which are supple enough to admit of being easily removed. 8. It is a useful practice to use sutures of different sizes for different parts of the same wound; capillary threads are of great utility as "perfectioning sutures" in autoplasty, when it is our object to obtain a perfectly exact union; for some operations large threads are required, as "sustaining sutures," to bring and keep together the base of the flaps, the edges of which are maintained in contact by capillary threads. 9. Metallic sutures may be left longer within the tissues, and they thus become a precious resource in wounds which, uniting slowly, require that their edges should be kept a long time in contact. 10. They may be advantageously employed as setons in small abscesses of the neck and face, when we wish to avoid producing visible cicatrices. We may also make use of them for the ligature of bloodvessels, and they are especially adapted for the operation for varicocele, allowing of the gradual division of the venous agglomeration by a very simple procedure.—*Brit. and For. Med.-Chir. Review*, Oct. 1862, from *Gaz. Hebdom.*, Nos. 9, 12, 17, 23.

52. *Horsehair as a Substitute for Wire for Sutures.*—Mr. T. SMITH, Demonstrator of Anatomy at St. Bartholomew's Hospital, states (*Lance*, Nov. 8, 1862) that, with a view of finding a material for sutures as unirritating and as unab-sorbent as wire, but more easy of adjustment and withdrawal, he performed during last spring a series of experiments on animals to determine the suitability of horsehair as a substitute for wire in certain cases. The horsehair used was such as is ordinarily sold by fishing-tackle makers. The experiments were performed upon dogs. The general results showed that there was no appreciable difference shown by the tissues in their tolerance of silver wire and horsehair. Both ma-

terials were equally unirritant; yet there was a difference in favour of horsehair in the greater facility of its adjustment and subsequent removal.

For the comparison between silk and horsehair as illustrating the relative merits of the two materials for sutures, he refers to the following experiments:—

“ June 10th, 1861. Two wounds of equal length, dividing the entire thickness of the integuments, were made on opposite and corresponding parts of a dog's abdomen; four sutures were applied at equal intervals to each, horsehair being used to one wound, and fine ligature silk to the opposite. On the third day both wounds looked alike healthy, and having their edges in close contact. On the fifth day the edges of the wound with silk sutures was slightly reddened, and pouting a little between the points of suture; the opposite wound had united without suppuration. On the eighth day three out of the four silk stitches had cut their way out, and the next day the remaining one came away, leaving the edges of the wound just separated, but granulating healthily. Three days later the wound had almost entirely healed. At this time the opposite wound had healed up soundly around the tracks of the horsehair sutures, which remained *in situ*, exciting no irritation whatever, until the dog's death, a month after the commencement of the experiment.

“ May 3d. The opposite femoral arteries of a dog were exposed to the same extent just below Poupart's ligament. Around the vessel on the right lower limb was passed a stout horsehair, and loosely tied; a silk suture being similarly adjusted round the opposite artery. A month after the operation the wound on the right side was all but healed, and was secreting a little serous discharge. At the same time the wound on the left side was swollen, its edges were everted and inflamed, and there was a profuse sero-purulent discharge. Two days later the wound on the right side had healed around the track of the horsehair seton, which was retained. While around the silk on the other side there was profuse suppuration; the surrounding parts were red, tender, and much swollen; and as the animal's general health was suffering, and it was rapidly emaciating, the silk was withdrawn. The wound now speedily altered its character, and by June 20th was soundly healed. September 3d, four months after its introduction, the horsehair still remained around the right femoral artery, exciting no irritation, the parts being soundly healed around the track of the seton.

“ The unirritating nature of horsehair as a material for suture is no less marked when applied to the tissues of the human body. It was used by Mr. Paget in a case of double entropion, the wound of the operation being in one eyelid seured with horsehair sutures, while the opposite was brought together with fine sewing cotton. At the end of a week three out of the four cotton sutures had cut out; while at the same time all four horsehair sutures remained firm.

“ As a material for attaching the margins of the skin and mucous membrane after circumcision, or other operations for phimosis, I have found horsehair most useful, having employed it both in children and adults. In one case particularly, where a complete circumcisio of the foreskin, with a free division of the mucous membrane was performed on a middle-aged gentleman, its good effect was remarkable. Six sutures were introduced, and excited so little disturbance that the patient was not kept for a single day from his business, which involved pretty active exercise. The wound healed without suppuration, and though left in, at the patient's request, some of them for fourteen days, the sutures caused no irritation, and were removed at last without difficulty. In the removal, the advantage of horsehair sutures over wire is considerable, since, unlike wire, which, after remaining a few days in a wound, stiffens into a metallic ring, horsehair, when cut just aside the knot, either retaining its original elasticity, springs open, or if it has been long soaked in the wound secretions, it becomes soft and pliable. I would recommend the use of this suture for wounds of the eyelid and other parts of the face, and to the loose integuments of the serotum and penis; since to all these parts I have either applied the suture myself with good effect, or I have seen it used by others at my suggestion.

“ But I can imagine that there are other uses to which it might be extended, and especially to facilitate the union of wounds of the conjunctiva. For the purposes of suture, long, white tail hairs are the best. Before being used they should be soaked for a minute or two in water, or they may be drawn once or

twice through the moistened finger-ends. The suture may be fastened off in a double knot, but if the hair is stiff, a third knot is often required. It may be removed in the ordinary manner, seizing the knot with the forceps, and dividing the suture just aside of it. It is scarcely necessary to remark, that horsehair, as a suture, is not suitable for wounds where there is much tension between the edges."

"P. S.—Since writing the above I have been informed that the subject of horsehair sutures has been treated of by Gustav. Simon, but having failed to meet with the publication in question, I am unable to refer to it more particularly."

53. *Encysted Tumours.*—Dr. HENLEY THORP makes (*Dublin Quarterly Jour. of Med. Science*, Feb. 1862) some interesting observations on this subject.

"No surgical subject," he remarks, "possesses greater interest than the pathological history of encysted tumours generally—the large size they are capable of attaining—the deep position they occasionally occupy in the visceral cavities, and their strange and unexpected contents invest these formations with an interest not subordinate to that of any others occurring in the organism. Although the mode of origin of growths such as those produced in the ovaries, amongst the abdominal and pelvic organs, at the bottom of the orbit, &c., cannot be explained upon the principles long ago suggested by Sir A. Cooper, the correctness of the views of this distinguished surgeon, as applied to superficial and subtegumentary wens and cysts, can scarcely be disputed; various circumstances connected with the pathology and symptoms of the tumours last referred to demonstrate their character—they are not new growths, but sebaceous follicles distended into sacs, by reason of imperforate or obstructed excretory orifices, and retained contents. Such swellings are commonly met with in situations where the sebaceous glands are largest and exist in greatest numbers, *e. g.*, on the head, face, and posterior aspect of the trunk; when small, they occupy a position immediately under the skin, or are closely connected with it; on the surface of the tumour, in its early stage, and corresponding with the impervious opening of the duct, a dark point may often be discovered—here a probe can be pushed into the cavity of the follicle, and the contents expressed; its interior is lined with a stratum of epithelium or thin cuticle, and the contents, however heterogeneous, be they lipoid as water, viscid as honey, pap-like or fatty, pulaceous or etheromatous, hairs or horns, whether they present under the microscope the appearance of epithelial scales, perfect or disintegrated, fatty particles, crystallized or amorphous or other elements, they are all the secreted products of the internal surface of the cyst, and correspond in every respect with the substances which a tegumentary glandular follicle is capable of furnishing. Facts like these establish beyond all doubt the opinion of Sir A. Cooper as to the follicular origin of encysted tumours, when subcutaneous or superficial. But the fact of such tumours being occasionally congenital—adherent to bone—occupying a position remote from the skin, and separated from it by a layer of muscle, has opposed itself to the unexceptional adoption of the doctrines enunciated in the *Surgical Essays*, and has led to the opinion that certain swellings of this class, although not far removed from the surface, are nevertheless adventitious growths—new formations—differing essentially from the subcutaneous variety. But it does not appear impossible that a body small at first, and connected with the skin, or even developed in its substance, should as it enlarged in size, come to occupy a deeper position, and be detached, in process of time, altogether from its original connections. Let us suppose a cyst, for example, to originate in the skin, covering the orbicularis palpebrarum; it enlarges in size and presses backwards, gradually the fibres of the muscle separate, and the tumour passes through them until the greater portion of its bulk lies upon a plane subjacent; but, the tumour being globular, the action of the muscle must now of necessity tend to place it in a still deeper position, and finally, by reapproximation of its fibres, to close over and separate it altogether from the cutaneous texture; imbedded at length in a loose areolar tissue, in close proximity with the periosteum underneath (which is fixed), and pressed upon in front by the muscular structure of the orbicularis (which is movable), it necessarily cou-